

Global Warming: Fact or Fiction

Contemporary politics have become quite a circus, or so it seems. Many issues are discussed in hyperbolic terms and not enough logic and thought seems to go into policy making and legislation as we have learned about as children in United States history and state history. Inflammatory remarks often shadow real issues and hide the simple choices of policy and the topic fields of study. One of the major current issues that not only face Americans, but every person on planet Earth, is global warming. Whether you think it exists or think it doesn't, you should be able to support your claims in a logical manner that can be proven, regardless of religious, scientific, or personal bias. The path should be logical and objective.

In the media and general discussions among people, global warming tends to follow two modes of thought, either scientific or historical. And while these two can and do overlap, it is vital that to understand the issues, the two remain mutually exclusive. This argument goes for both supporters and nonbelievers of the issue. Among scientists, the observed data has split entire disciplines in two, those who believe global warming is occurring by whatever cause, and those who believe anthropogenic sources have nothing to do with warming, if it is occurring at all. Four consistent factions that are discussed when global warming is argued for or against are 1) conversationalists, 2) skeptics, 3) non-believers, and 4) realists or pragmatists.

The energy use of Americans is always changing and can be summarized into three categories, resources, responsibility, and security. More directly written, "The strength of industry, the speed of transportation, the myriad comforts and conveniences of home and workplace, and the security of the nation all derive from ever more ingenious provisions and application of various sources and forms of energy." (National Academies, 2008) This

statement not only introduces methods of how Americans use energy, but offers broad views on how to further energy production and technology. When diving more into the issue, it's easy to see why some are so passionate and "know" they are correct. If people in general, and Americans specifically, continue to use energy at increasing rates, exponential almost, then there should be laws and statutes incorporated within industry to stave off excess productions and find more efficient methods of operation through research and development.

A surprising example from the National Academies text was that for every 100 units of fuel (coal, in this case), only 2 of those units ever make it to the average house for lighting a light bulb, but 34 units are lost as heat from the bulb. In other words, the effective efficiency of the light bulb is only 2% from beginning to end. Most of the energy is lost in the production of the electricity (a total of 62 units), leaving only 38 units to be transferred to the power lines. About two units are lost along the way from the lines, and the 34 units are lost as heat, leaving only two units for lighting. This case indicates that "a typical coal-fired electrical plant might be 38% efficient, so a little more than one-third of the chemical energy content of the fuel is ultimately converted to usable energy." (National Academies, 2008) With a real and common example like this, it is curious why alternative fuel sources have not been tested more often and more initiative has not been put forth to harness water, wind, and solar technologies on larger scales.

Scientists believe that while rising carbon dioxide and other greenhouse gas levels are leading to the increase in worldly temperature, they are not the only factors that impact global warming. El Nino and La Nina affect the sea's surface temperature and since the ocean covers so much of the Earth, any slight decrease or increase in the ocean's temperature can dramatically affect its surroundings. These things coupled with changing aerosol levels in the ozone and the sun's irradiance seem to be what's causing the Earth's temperature to increase over the years.

The presence of greenhouse gases in the atmosphere has sharply risen in the previous 300 to 400 years over the course of the last 10,000 years. Specific compounds discussed are nitrous oxide, methane, and carbon dioxide. Credibility is high, based on the source, and the inclusion of error bars is beneficial to aid in the understanding of the value being represented. It's alarming to see "the atmospheric concentration of methane in 2005 exceeds by far the natural range of the last 650,000 years (320 to 790 ppb) as determined from ice cores" and the levels of nitrous oxide and carbon dioxide follow similar trends. (IPCC, 2007) From the plots in the report, it is evident that these levels have begun increasing more sharply since the beginning of the Industrial Revolution and could be a direct result of anthropogenic activity.

While there is much science and technical discussion in the IPCC report, the reports main audience is policymakers and government officials that require short, although dense, summaries in order to make informed decisions. This fourth report put out by the IPCC "describes progress in understanding of the human and natural drivers of climate change, observed climate change, climate processes and attribution, and estimates of projected future climate change." In this statement, "climate change" refers to any change over time, due to either natural events or human activity. (IPCC, 2007) These claims by the National Academies and the Intergovernmental Panel on Climate Change focus mainly on science and operate with the assumption that global warming exists to some degree. While it is not specified in these sources if global warming definitively exists, strong evidence supports that climate conditions are changing. For policy makers, it appears erring on the side of caution is best.

The above discussions effectively represent the mindsets of conversationalists and skeptics. That is to say, some trust global warming is a real phenomenon with real and direct results. The arguments could also be described as subpar and lack definitive evidence, in turn,

being suspect and causing skeptics to ponder the sources validity. Others see the same evidence as proof that global warming does not exist. These non-believers state that any warming the Earth is facing is not due to anthropogenic reasons and that the Earth naturally goes through cooling and heating periods. Often used is the miniature ice age (called the Little Ice Age) during the late Renaissance, about the time of the American Revolution and lasting until about 1850. (Mann, 2002) During this time, much of the Northern hemisphere experienced colder and longer winters. Legends of such cold spells were that Mary Shelley and her husband were trapped in their winter cabin and with little to do, Mary would eventually write the first story of Frankenstein. Another product of such longer winters was that the trees didn't grow as much, so instead of becoming large, they became dense from the inhibiting nature of the long, cold season. This caused the violins made by the Stradivari family to possess the distinct and heavenly tones; these are the famous Stradivarius violins. (Pickrell, 2004)

From a personal viewpoint, I believe that global warming does exist and is one of the biggest issues we face today because it not only affects one nation, but rather the whole world. From the research conducted, I've concluded that global warming is a process that can be slowed if everyone works together to keep their actions in check and uses an objective point of view. I think global warming is inevitable in some respects, partly due to the nature of humanity and the drive for people to do better than their ancestors.

From a historical viewpoint, global cooling and warming go hand in hand and it should not be put entirely on the shoulders of humanity. Earth cycles continually, whether it is the days passing and turning into night, the seasons changing, erosion making rivers and tearing down mountains, or the average global temperature fluctuating, it all seems to be a process beyond our control as human beings. But, our role as human beings is to not antagonize what we do not

fully understand and always try to be conscious of our decisions and anticipate their results. As more animals begin their journey to extinction, we must learn to control our growth and societal technological amazement. If we can't control our consumption of certain components that lead to the expedited nature of global warming we are doomed to repeat the catastrophic fate of the dinosaurs, except this time, we will be the architects of our own damnation and extinction.

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